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size, varying little to the back of the jaw. The long teeth have sub-compressed crowns with opposed cutting edges, and are smooth except at their bases. These are distantly sulcate, the separating ridges being acute. The smaller teeth are perfect cones and resemble those of *Gars* without their sulci.

There are more long teeth in the premaxillary bone than below. Pitting of cranium distinct, elegant. Length of skull about one foot. Length of long teeth 1.25 inches; of small ones 5 inch.

CROCODILUS SULCIFERUS. Cope, sp. nov.

A medium sized species with cranium deeply and roughly pitted. The chief character is at present visible in the teeth. The larger of these are of sub-cylindric and short conic crown, which is superficially grooved from basis to near apex; sulci coarse, open.

ANOSTIRA RADULINA. Sp. nov.

Based on two marginal bones one from the front, the other from the rear, of the carapace of an animal of twice the bulk of the largest *Anostire* yet found. Apart from size, the sculpture is peculiar. It consists in the anterior of closely packed vermicular ridges which run out flat on the posterior and upper edge. In the posterior, it consists of only closely placed minute tubercles over the whole surface.

M.

Length front one on free edge.....	0.025
Width " " "	.028
Length posterior on free edge.....	.025
Width " " "	.025

RECENT MONTHLY RAINFALL IN THE UNITED STATES.*

BY PLINY EARLE CHASE.

(*Read before the American Philosophical Society, November 1st, 1872.*)

General Myer has kindly favored me with a transcript of the monthly reports of rainfall at the several Signal Service Stations, from October, 1871, to September, 1872, both inclusive. The reports were arranged, at my suggestion, in six groups, in order to exhibit the local influence of proximity to the great lakes, the gulf, or either ocean, and of situation on opposite sides of the Mississippi Valley. In the interpolations (which are all enclosed in brackets), for months in which the Bureau received no returns, I have usually given more weight to the general rainfall of the section than to the local precipitation. The deficient Philadelphia report, for October, 1871, was supplied from the records at Pennsylvania Hospital.

*Published by permission of Brigadier General Albert J. Myer, Chief Signal Officer, U. S. A.

Having thus completed the tabular data, I computed the normal percentages from the fourth successive means, in accordance with the general plan of my previous meteorological papers. The resemblance between the lake curve and the two interior curves is more striking, and the lake influence is less marked than I anticipated; the opposition between the Pacific and interior curves exhibits the effects of differences of temperature between polar and equatorial currents, in the air and ocean, at opposite seasons; the differences between the Atlantic, the Pacific, the Gulf, and the land curves, are quite as striking as any of the differences between the curves of lunar-monthly rainfall at different stations; and a *larger proportion of the solar than of the lunar influence is disguised*, by aggregating the accompanying six sets of solar normals, and the seven sets of lunar normals in the foregoing communication.

Monthly Rainfall of 1871—2 at United States Signal Service Stations.

GULF STATIONS.

STATIONS.	1871, Oct.	Nov.	Dec.	1872, Jan.	Feb.	Mar.	Apr.	May	June	July	Aug	Sep.
Indianola.....	(2.27)	(1.61)	(.73)	(1.25)	(1.72)	(2.10)	(1.49)	1.08	0.86	1.49	2.84	0.81
Galveston.....	17.81	5.67	2.40	4.61	2.27	2.77	5.96	2.21	3.39	0.34	2.63	2.33
New Orleans...	9.09	7.14	1.46	5.10	4.77	9.18	5.01	3.14	5.34	6.43	3.75	2.10
Shreveport.....	(6.18)	3.04	1.30	5.25	5.89	4.11	7.18	9.10	2.70	1.62	0.40	2.91
Vicksburg.....	4.13	7.03	2.05	3.24	5.34	7.82	7.79	13.23	3.82	2.11	0.49	0.72
Mobile.....	5.33	6.68	1.86	3.69	8.00	12.76	4.35	3.78	6.33	13.57	1.69	2.11
Lake City.....	5.03	3.99	2.05	2.41	3.02	9.59	1.90	0.20	5.29	3.86	5.25	4.53
Punta Rassa.....	1.80	0.98	2.68	2.64	2.71	0.69	1.54	2.88	7.16	8.68	3.97	5.14
Key West.....	3.25	1.90	3.32	1.60	7.19	1.04	0.08	1.01	2.14	6.92	4.89	3.15
	54.89	38.04	17.35	29.79	40.91	50.06	35.30	36.63	37.03	45.02	25.91	23.80

LAKE STATIONS.

Milwaukee.....	3.37	2.54	1.55	0.90	0.34	0.53	1.84	2.92	3.67	1.98	1.89	8.72
Chicago.....	(2.29)	3.62	3.44	0.68	0.84	3.78	3.03	2.76	3.45	3.09	2.59	6.43
Cairo.....	3.81	2.93	4.25	1.44	2.26	2.02	4.52	5.00	1.79	3.45	0.19	2.56
Indianapolis....	1.54	3.52	2.39	1.17	1.41	1.31	3.26	3.22	3.28	10.95	2.69	2.81
Cleveland.....	0.60	2.42	0.84	2.00	0.80	1.30	2.22	3.99	2.68	6.19	4.53	3.47
Toledo.....	0.78	1.48	1.91	1.20	1.10	1.68	1.87	3.97	3.96	5.76	1.16	3.38
Cincinnati.....	1.80	4.18	3.27	0.60	1.67	1.47	5.14	4.70	3.81	7.01	2.21	1.62
Marquette.....	2.97	0.65	0.33	0.39	0.31	0.37	0.88	6.60	3.32	4.79	2.74	8.30
Escanaba.....	2.94	1.94	1.41	0.90	1.19	1.24	1.50	7.21	2.45	7.11	2.87	3.97
Grand Haven....	1.75	2.33	1.38	1.54	0.64	1.64	2.31	2.94	2.27	1.46	6.31	9.37
Detroit.....	0.69	2.76	1.88	1.05	0.69	1.22	2.15	5.64	2.85	2.63	2.60	3.84
Buffalo.....	1.64	3.60	2.55	1.94	2.21	1.30	1.43	2.23	3.52	1.66	1.94	4.34
Rochester.....	2.59	3.10	1.82	2.37	1.28	2.50	2.15	2.18	5.55	2.56	1.89	1.72
Oswego.....	1.44	2.96	1.30	1.48	1.17	2.43	1.44	2.72	4.48	1.84	0.71	2.44
Burlington.....	2.75	0.73	0.78	0.42	0.13	0.13	0.73	3.59	3.66	7.27	9.70	3.38
	30.96	38.76	29.10	18.08	16.04	22.92	34.47	59.67	50.54	67.75	44.02	66.35

PACIFIC STATIONS.

Portland, O.....	(2.59)	2.77	7.62	6.56	12.13	5.28	2.96	0.92	1.52	0.20	.13	1.2 ⁶
San Francisco...	.07	2.81	14.36	4.03	6.90	1.59	0.81	0.18	0.04	0.01	.00	0.0 ⁴
San Diego.....	(.64)	1.19	1.39	0.99	1.63	0.46	0.26	0.12	.00	.00	.18	.00
	3.30	6.77	23.37	11.58	20.66	7.33	4.03	1.22	1.56	.21	.31	1.30

WESTERN INTERIOR.

STATIONS.	1871, Oct.	Nov.	Dec.	1872, Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sep.
Fort Benton....	(1.17)	(1.15)	1.30	0.27	0.34	0.82	0.67	0.64	1.14	4.62	0.61	1.82
Virginia City..	(.98)	(.96)	1.43	1.45	0.79	0.20	0.35	1.78	0.74	2.73	0.60	0.28
Corinne.....	0.35	3.22	4.04	0.70	2.42	.55	1.43	2.66	0.47	0.11	1.04	0.14
Cheyenne.....	0.24	0.66	0.16	0.02	0.27	0.38	1.61	1.99	1.84	3.90	2.05	1.03
Denver City....	(1.67)	(1.63)	(1.04)	0.55	0.22	1.71	2.09	3.74	2.07	2.69	1.65	1.57
Santa Fe.....	(.97)	(.95)	.61	0.34	0.20	0.13	3.14	0.45	2.44	2.62	2.98	0.27
Omaha.....	2.06	4.22	0.91	0.09	0.43	1.61	3.84	3.91	6.35	6.36	1.78	3.24
Fort Sully.....	(1.76)	(1.72)	(1.10)	.35	(.49)	(1.06)	(1.78)	2.93	2.34	6.48	1.53	0.21
Leavenworth....	4.25	3.94	0.73	0.13	0.87	1.95	2.98	7.91	4.75	9.92	6.56	4.22
Duluth.....	4.19	1.47	2.05	0.86	0.46	0.85	1.80	4.62	4.46	5.83	2.84	5.01
Breckenridge....	2.35)	(2.30)	(1.48)	(.46)	(.66)	(1.41)	(2.37)	4.05	5.10	6.01	1.78	1.18
St. Paul.....	1.90	1.41	1.20	0.28	0.26	1.64	1.69	5.71	3.81	4.23	3.52	5.62
Davenport.....	3.19	3.33	1.61	0.13	0.10	1.82	5.06	4.46	3.78	3.80	8.91	5.64
Keokuk.....	5.22	2.89	1.46	0.07	0.39	2.88	3.66	3.70	5.81	6.77	1.97	2.26
St. Louis.....	2.07	1.83	1.17	0.64	1.15	2.43	3.17	5.97	4.28	4.41	0.93	3.45
	32.37	31.68	20.29	6.34	9.05	19.44	32.64	54.57	49.38	70.48	38.75	35.60

EASTERN INTERIOR.

Nashville.....	1.31	2.13	1.65	2.32	2.11	3.09	5.91	3.09	5.17	4.90	1.65	4.50
Knoxville.....	4.28	2.61	3.27	2.99	2.24	3.04	3.61	2.86	6.68	2.29	6.27	3.89
Louisville.....	1.85	2.51	3.29	2.18	(2.26)	1.41	8.40	4.49	6.19	3.67	2.45	4.41
Memphis.....	4.04	2.23	1.62	2.17	4.24	5.19	6.99	4.16	4.44	4.23	0.54	3.62
Pittsburgh.....	2.66	3.30	2.00	1.85	0.97	1.33	0.88	2.61	2.35	7.70	2.81	2.54
Philadelphia....	4.86	4.09	1.57	0.95	1.12	3.67	2.60	3.15	4.29	9.20	7.81	3.66
	19.00	16.87	13.40	12.46	12.94	17.73	28.39	20.36	29.12	31.99	21.53	22.62

ATLANTIC STATIONS.

Portland, Me....	6.55	6.37	3.00	0.77	0.35	1.44	1.60	3.23	5.95	2.87	6.97	3.12
Boston.....	5.88	6.42	3.38	2.11	2.31	4.05	1.31	3.29	4.84	4.00	10.68	6.04
New London....	8.35	5.50	2.78	2.46	0.96	2.93	2.30	3.16	2.78	5.35	6.06	6.98
New York.....	7.07	3.76	1.19	2.34	1.44	3.93	2.49	2.25	2.93	9.36	6.08	3.44
Baltimore.....	3.11	3.24	1.90	0.88	1.46	3.06	3.06	1.44	4.16	1.58	4.59	5.06
Cape May.....	4.91	6.42	2.90	2.99	2.99	6.61	0.92	1.50	2.15	3.27	3.09	4.51
Washington....	1.50	4.85	1.36	0.23	0.93	3.22	1.74	1.43	2.78	0.82	5.72	3.92
Lynchburg.....	1.60	3.76	1.12	2.08	1.99	4.24	3.20	3.15	2.53	1.56	2.27	1.26
Norfolk.....	4.14	5.76	2.18	2.91	7.33	4.51	3.53	5.68	5.03	3.63	3.20	2.40
Wilmington....	3.02	4.46	3.90	3.62	5.20	6.42	0.97	4.89	2.87	5.54	11.15	8.22
Charleston....	4.76	4.09	3.67	3.78	5.13	9.78	2.46	6.30	1.87	2.30	7.81	7.88
Savannah.....	3.55	2.22	1.59	2.09	4.65	10.18	2.75	5.22	9.52	4.36	12.31	3.52
Augusta.....	1.62	7.78	5.98	4.20	5.87	10.88	2.95	5.33	4.77	6.87	4.10	1.33
Jacksonville....	3.62	3.63	2.65	3.44	2.70	7.32	2.39	1.25	6.97	2.92	6.41	10.66
	59.68	68.26	37.60	33.90	43.31	78.57	31.67	48.15	59.18	54.53	90.44	68.33

Normal Percentages of Rainfall.

	Atlantic Stations.	Gulf Stations.	Pacific Stations.	Lake Stations.	Western Interior.	Eastern Interior.	Mean Solar.	Mean Lunar.*
January.....	75	86	239	55	39	65	93	99
February.....	87	107	209	51	39	73	94	97
March.....	95	116	143	66	64	93	96	98
April.....	89	110	73	95	103	111	97	101
May.....	87	104	34	124	140	122	102	106
June.....	99	105	18	140	162	132	109	104
July.....	116	100	10	143	162	133	111	103
August.....	128	90	12	138	138	120	104	106
September.....	126	95	27	126	112	106	98	104
October.....	115	107	70	107	98	93	98	95
November.....	100	98	147	87	83	81	99	95
December.....	82	81	218	70	59	70	97	98

* The twelve normal ordinates of the Mean Lunar curve are obtained from "Aggregate B." in the "Normals of Lunar-Monthly Rainfall." The aggregates for two and a half days are added together, to obtain the normal aggregate for one-twelfth of a month, and the normal percentages computed from the results. E. g., the 1st day, added to three-fourths of the sum of the 30th and 2d days, gives the normal aggregate for the 1st twelfth; the 3d and 4th days, added to one-fourth of the sum of the 2d and 5th days, gives the normal aggregate for the 2d twelfth.